

Lluís Mas Ribas

Institute of Theoretical Astrophysics
University of Oslo
Sem saelens vei 13
Svein Rosseland hus
0371 Oslo (Norway)

lluismasribas@gmail.com
Phone : (00 47) 22 84 55 73

RESEARCH INTERESTS

Circumgalactic medium. Diffuse emission halos and predictions of future observations.
Metal enrichment of galaxies and intergalactic medium. Absorption features in spectra of background sources.
Sources of the cosmic photon budget and ultra-faint galaxies.
High-redshift universe, Reionization Epoch. Population III stars and their observables.
Application of radiative transfer codes on cosmological simulations.

EDUCATION

PH. D. ASTROPHYSICS.

INSTITUTE OF THEORETICAL ASTROPHYSICS.
UNIVERSITY OF OSLO, NORWAY, 2014 - 2018.
Advisor : Mark Dijkstra

M. SC. PARTICLE PHYSICS, ASTROPHYSICS AND COSMOLOGY (Graduated with Honors).

INSTITUT DE CIÈNCIES DEL COSMOS.
UNIVERSITAT DE BARCELONA, SPAIN, 2014.
Thesis : "The mean metal-line spectrum of DLAs in BOSS"
Advisor : Jordi Miralda-Escudé

B. SC. FUNDAMENTAL PHYSICS.

UNIVERSITAT DE BARCELONA, SPAIN, 2013.

HONORS AND AWARDS

GRADUATE RESEARCH FELLOWSHIP, UNIVERSITY OF OSLO, 2014-2018

M. SC. EXTRAORDINARY PRIZE, UNIVERSITAT DE BARCELONA, 2014

SCHOOLS AND CONFERENCES

"Circle of Life : IGM, CGM and ISM" (South Africa), August 2017 (*contributed talk*)
"What matters around galaxies", Durham (UK), June 2017 (*contributed flash talk*)
"The Galaxy-halo Connection Across Cosmic Time", KITP Santa Barbara (US), April 2017 (*contributed talk*)
"The Snowbird Cosmic Lyman - Alpha Workshop", Utah (US), March 2017 (*contributed talk and poster*)
"The Dawn of Galaxies", Obergurgl (Austria), January 2017 (*contributed talk*)
"Cosmic Reionization", MIAPP Garching (Germany), April 2016 (*contributed talk*)
"From Wall to Web", Berlin (Germany), July 2016 (*contributed poster*)
"4th Meeting on Fundamental Cosmology", Barcelona (Spain), June 2016 (*contributed poster*)

"46th Saas-Fee Course. Lyman-alpha as an Astrophysical and Cosmological Tool", Switzerland, March 2016
"Dynamics of the Interstellar Medium and Star Formation", Heidelberg (Germany), September 2015
"First Stars, Galaxies and Black Holes", Groningen (Netherlands), June 2015

RESEARCH TALKS

ITC seminar Harvard/CfA (US), October 2017
Galread seminar Princeton, (US), October 2017
Galaxy Journal Club at STScI, Baltimore (US), October 2017
ENIGMA group meeting, Heidelberg (Germany), August 2017
Cosmology Seminar series, UC Davis (US), April 2017
Tea Talk Seminars, Caltech (US), April 2017
IMPS seminar, UC Santa Cruz (US), April 2017
Cosmology seminar, UC Santa Barbara (US), April 2017
IMPS seminar, UC Santa Cruz (US), April 2017
Galform talk, UC Berkeley (US), April 2017
Cosmology group seminar, UC Berkeley (US), April 2017
Cosmology seminar, UiO (Norway), October 2016
ENIGMA group meeting, Heidelberg (Germany), August 2016
Pizza lunch talk, Columbia University, NY, October 2015

TEACHING EXPERIENCE

TEACHING ASSISTANT FOR GRADUATE CLASSES

Radiative Processes in Astrophysics (University of Oslo)
Exercises classes, review/summary of theory, wrote and graded homework, assignments and exams.
(3 hours per week)
Professor : Luc Rouppe Van der Voort.
Fall semesters 2015, 2016 and 2017.

TEACHING ASSISTANT FOR UNDERGRADUATE CLASSES

Cosmology (University of Oslo)
Exercises classes, review/summary of theory, wrote and graded homework, assignments and exams.
(3 hours per week)
Professor : David Fonseca Mota.
Spring semester 2016.

YOUTH EDUCATION

"Experiments in Physics" (University of Barcelona)
Co-taught 2-week lab-based program for high-school students.
Design and use of cloud chamber for sub-atomic particle detection and use of observational astronomy instrumentation.
January 2014.

SCIENCE LECTURER

Taught sciences (Physics, Chemistry, Meteorology, Science of Materials), Architectural Structures and Materials, Vehicle Mechanics, and Fire Prevention and Extinction.
Course for firefighter candidates.
(for about 100 hours)
Private Center for Studies "Centre d'Estudis Adams", Barcelona, Spain.
During academic course period in 2009 and 2010.

OUTREACH AND STEWARDSHIP

ASTRONOMY ON TAP OSLO

Lead an co-organizer of a public monthly event with ~ 100 attendees where guests provide talks, interviews, games, and other activities related to the divulgation of Astronomy and other connected sciences/technologies.

PUBLIC TALKS

"Hacking Space and Time", Astronomy on Tap Oslo (Norway), July 2017

Public talk on Special and General Relativity for a non-scientific audience.

"Sobre el cel del Llemena", Agrupacio Astronomica de les Gavarres (Spain), July 2016

Public talk on Astronomy for amateur astronomers members of an Astronomy association in Spain.

LOCAL-RADIO DEBATE

Participant in a discussion on the search for extraterrestrial life in a local radio, Oslo, October 2017

FORMER CAREER

PROFESSIONAL FIREFIGHTER

Full-time work in combination with studies.

Government of the Generalitat de Catalunya (Spain).

During 2008 - 2014

ACADEMIC SERVICE

Referee Monthly Notices of the Royal Astronomical Society, since 2016

REFERENCES

Prof. Joseph F. Hennawi

joe@physics.ucsb.edu

Department of Physics, University of California,
Santa Barbara, CA 93106, USA

Prof. Mark Dijkstra

astromark77@gmail.com

Institute of theoretical astrophysics (Oslo).

Sem saelands vei

0371 Oslo (Norway)

Prof. Jordi Miralda Escudé

jordi.miralda@gmail.com

Institut de Ciències del Cosmos.

Universitat de Barcelona

Martí i Franqués, 1

08028 Barcelona (Spain).

Prof. Jason X. Prochaska

xavier@ucolick.org

University of California Observatories/Lick Observatory

Department of Astronomy and Astrophysics,

University of California, Santa Cruz, CA 95064

NON SCIENTIFIC PUBLICATIONS

2. *Questionari Bombers Generalitat de Catalunya*
Ed.Adams ISBN :978-84-9943-498-8 (2010)
Co-author of multiple choice questionnaire for the preparation of firefighter exams (over 1000 questions).
Contribution above 60% of the questions.
1. *Temari Bombers Generalitat de Catalunya*
Ed.Adams ISBN :978-84-9943-451-3 (2010)
Co-author of text book for the preparation of firefighter exams.
Updated and extended several chapters of previous book version.

SCIENTIFIC PUBLICATIONS (7 first author)

- 12 - . Perez-Rafols, I. et al., including **Mas-Ribas, Ll.** "*The cosmological bias factor of damped Lyman alpha systems : dependence on metal line strength*" MNRAS.480.4702P (2018)
- 11 - . Arinyo-i-Prats, A. et al., including **Mas-Ribas, Ll.** "*A metal-line strength indicator for Damped Lyman Alpha (DLA) systems at low signal-to-noise*" MNRAS.temp.2252A (2018)
- 10 - . **Mas-Ribas, Ll.** et al. "*Origin of Metals around Galaxies I : Catalogs of metal-line absorption doublets from high-resolution quasar spectra*" ApJ 862, 50M (2018)
- 9 - . **Mas-Ribas, Ll.** & Hennawi, J. F. "*Revealing the Warm and Hot Halo Baryons via Thomson Scattering of Quasar Light*" AJ 156, 66M (2018)
- 8 - . Perez-Rafols, I. et al., including **Mas-Ribas, Ll.** "*The SDSS-DR12 large-scale cross-correlation of Damped Lyman Alpha Systems with the Lyman Alpha Forest*" MNRAS.473.3019P (2018)
- 7 - . **Mas-Ribas, Ll.** et al. "*Small-scale Intensity Mapping : Extended Halos as a Probe of the Ionizing Escape Fraction and Faint Galaxy Populations during Reionization*" ApJ 846, 11M (2017)
- 6 - . **Mas-Ribas, Ll.** et al. "*The Mean Metal-line Absorption Spectrum of Damped Ly α Systems in BOSS*" ApJ 846, 4M (2017)
- 5 - . Schauer, A. et al., including **Mas-Ribas, Ll.** "*Lyman-Werner escape fractions from the first galaxies*" MNRAS.467.2288S (2017)
- 4 - . **Mas-Ribas, Ll.** et al. "*Small-scale Intensity Mapping : Extended Ly α , H α , and Continuum Emission as a Probe of Halo Star Formation in High-redshift Galaxies*" ApJ 841, 19M (2017)
- 3 - . **Mas-Ribas, Ll.** et al. "*Boosting Ly α and He II λ 1640 Line Fluxes from Population III Galaxies : Stochastic IMF Sampling and Departures from Case-B*" ApJ 833, 65M (2016)
- 2 - . Geach, J. E. et al., including **Mas-Ribas, Ll.** "*ALMA Observations of Ly α Blob 1 : Halo Substructure Illuminated from Within*" ApJ 832, 37G (2016)
- 1 - . **Mas-Ribas, Ll.** & Dijkstra, M. "*On the Contribution of Fluorescence to Ly α Halos around Star-Forming Galaxies*" ApJ 822, 84M (2016)